



10/031,313

Exhibit I

## EXHIBIT I

## START VP1

2170 2180 2190 2200 2210 2220  
TGGATGACTGCATCTTTGAACAATAAATGATTTAAATCAGGTATGGCTGCCGATGGTTAT  
1 M A A D G Y 6

XhoI

2230 2240 2250 2260 2270 2280  
CTTCCAGATTGGCTCGAGGACACTCTCTCTGAAGGAATAAGACAGTGGTGGAAGCTCAAA  
L P D W L E D T L S E G I R Q W W K L K<sub>26</sub> 26

BsrBI

2290 2300 2310 2320 2330 2340  
CCTGGCCCCACCAACCAAGCCCCGAGAGCGGCATAAGGACGACAGCAGGGGTCTTGTG  
P G P P P P K P<sub>34</sub> A E R H K D D S R G L V 46  
Vp1 hydro

HindII

2350 2360 2370 2380 2390 2400  
CTTCCTGGGTACAAGTACCTCGGACCTTCAACGGACTCGACAAGGGAGAGCCGGTCAAC  
L P G Y K Y L G P F N G L D K G E P V N 66

XhoI

2410 2420 2430 2440 2450 2460  
GAGGCAGACGCCGCGGCCCTCGAGCAGACAAAGCCTACGACCGGCAGCTCGACAGCGGA  
E A D A A A L E H D K A Y D R Q L D S G 86

2470 2480 2490 2500 2510 2520  
GACAACCCGTACCTCAAGTACAACCACGCCGACGCGGAGTTTCAGGAGCGCCTTAAAGAA  
D N P Y L K Y N H A D A E F Q E R L K E 106

2530 2540 2550 2560 2570 2580  
GATACGTCTTTTGGGGGCAACCTCGGACGAGCAGTCTTCCAGGCGAAAAAGAGGGTTCTT  
D T S F G G N L G R A V F Q A K K R V L 126

## START VP2

2590 2600 2610 2620 2630 2640  
GAACCTCTGGGCCTGGTTGAGGAACCTGTTAAGACGGCTCCGGGAAAAAAGAGGCCGTA  
E P L G L V E E P V K T A P G K K R P V 146

2650 2660 2670 2680 2690 2700  
GAGCACTCTCCTGTGGAGCCAGACTCCTCCTCGGGAACCGGAAAGGCGGGCCAGCAGCCT  
E H S P V E P D S S S G T G K A G Q Q P 166

2710 2720 2730 2740 2750 2760  
GCAAGAAAAAGATTGAATTTTGGTCAGACTGGAGACGCAGACTCAGTACCTGACCCCCAG  
A R K R L N F G Q T G D A D S V P D P Q 186

## START VP3

2770 2780 2790 2800 2810 2820  
CCTCTCGGACAGCCACCAAGCAGCCCCCTCTGGTCTGGGAATAACGATGGCTACAGGC  
P L G Q P P A<sub>193</sub>A P S G<sub>197</sub>L G T N T M A T G 206

D0

2830 2840 2850 2860 2870 2880  
 AGTGGCGCACCAATGGCAGACAATAACGAGGGCGCCGACGGAGTGGGTAATTCCTCGGGA  
 S G A<sub>209</sub>P M A D<sub>213</sub>N N E G A<sub>218</sub>D G V G<sub>222</sub>N S S G 226  
 (Mamounas) D1 (Mamounas) D2

2890 2900 2910 2920 2930 2940  
 AATTGGCATTGCGATTCCACATGGATGGGCGACAGAGTCATCACCACCAGCACCCGAACC  
 N W H C D S T W M G D R V I<sub>240</sub>T T S T<sub>244</sub>R T 246  
 (Mamounas) D3 (Mamounas) D4

2950 2960 2970 2980 2990 3000  
 TGGGCCCTGCCCCACCTACAACAACCACCTCTACAAACAAATTTCCAGCCAATCAGGAGCC  
 W A L P T Y N N H L Y K Q I S S Q S G A 266  
 (SEQ ID NO: 2)

3010 3020 3030 3040 3050 3060  
 TCGAACGACAATCACTACTTTGGCTACAGCACCCCTTGGGGGTATTTTGACTTCAACAGA  
 S N D N H Y F G Y S T P W G Y F D F N R 286

3070 3080 3090 3100 3110 3120  
 TTCCACTGCCACTTTTCACCACGTGACTGGCAAAGACTCATCAACAACAACTGGGGATTCT  
 F H C H F S P R D W Q R L I N N N W G F 306

3130 3140 3150 3160 3170 3180  
 CGACCCAAGAGACTCAACTTCAAGCTCTTTAACATTCAAGTCAAAGAGGTCACGCAGAAAT  
 R P K R L N F K L F N I Q V K E V T Q N 326

3190 3200 3210 3220 3230 3240  
 GACGGTACGACGACGATTGCCAATAACCTTACCAGCACGGTTCAGGTGTTTACTGACTCG  
 D G T T T I A N N L T S T V Q V F T D S 346

3250 3260 3270 3280 3290 3300  
 GAGTACCAGCTCCCGTACGTCCTCGGCTCGGCGCATCAAGGATGCCTCCCGCCGTTCCCA  
 E Y Q L P Y V L G S A H Q G C L P P F P 366

3310 3320 3330 3340 3350 3360  
 GCAGACGTCTTCATGGTGCCACAGTATGGATACCTCACCTGAACAACGGGAGTCAGGCA  
 A D V F M V P Q Y G Y L T L N N G S Q A 386  
 (SEQ ID NO: 3)

3370 3380 3390 3400 3410 3420  
 GTAGGACGCTCTTCATTTTACTGCCTGGAGTACTTTCTTCTCAGATGCTGCGTACCGGA  
 V G R S S F Y C L E Y F P S Q M L R T G 406

3430 3440 3450 3460 3470 3480  
 AACAACTTTACCTTCAGCTACACTTTTGAGGACGTTTCCTTTCCACAGCAGCTACGCTCAC  
 N N F T F S Y T F E D V P F H S S Y A H 426

3490 3500 3510 3520 3530 3540  
 AGCCAGAGTCTGGACCGTCTCATGAATCCTCTCATCGACGATACCTGTATTACTTGAGC  
 S Q S L D R L M N P L I D Q Y L Y Y L S 446

3550 3560 3570 3580 3590 3600  
 AGAACAAACACTCCAAGTGGAAACCACCACGAGTCAAGGCTTCAGTTTCTCAGGCCGGA  
 R T N T P S G T T T Q S R L Q F S Q A G 466  
 (SEQ ID NO: 4)

3610 3620 3630 3640 3650 3660  
GCGAGTGACATTGCGGACCAGTCTAGGAACTGGCTTCCTGGACCCTGTTACCGCCAGCAG  
A S D I R D Q S R N W L P G P C Y R Q Q 486

3670 3680 3690 3700 3710 3720  
CGAGTATCAAAGACATCTGCGGATAACAACAACAGTGAATACTCGTGGACTGGAGCTACC  
R V S K T S A D N N N S E Y S W T G A T 506

3730 3740 3750 3760 3770 3780  
AAGTACCACCTCAATGGCAGAGACTCTCTGGTGAATCCGGGCCCCGGCCATGGCAAGCCAC  
K Y H L N G R D S L V N P G P A M A S H 526

## BsrBI

3790 3800 3810 3820 3830 3840  
AAGGACGATGAAGAAAAGTTTTTCTCAGAGCGGGGTTCTCATCTTTGGGAAGCAAGGC  
K D D E E K F F P Q S G V L I F G K Q G 546  
*ins534 (SEQ ID NO: 5)*

3850 3860 3870 3880 3890 3900  
TCAGAGAAAACAAATGTGGACATTGAAAAGGTCATGATTACAGACGAAGAGGAAATCAGG  
S E K T N V D I E K V M I T D E E E I R 566

3910 3920 3930 3940 3950 3960  
ACAACCAATCCCGTGGCTACGGAGCAGTATGGTTCTGTATCTACCAACCTCCAGAGAGGC  
T T N P V A T E Q Y G S V S T N L Q R G 586  
*ins573 (SEQ ID NO: 6, 7)* *ins587*

## HindII

3970 3980 3990 4000 4010 4020  
AACAGACAAAGCAGCTACCGCAGATGTCAACACACAAGGCGTTCTTCCAGGCATGGTCTGG  
N R Q A A T A D V N T Q G V L P G M V W 606  
*(SEQ ID NO: 8)*

4030 4040 4050 4060 4070 4080  
CAGGACAGAGATGTGTACCTTCAGGGGCCCATCTGGGCAAAGATTCCACACACGGACGGA  
Q D R D V Y L Q G P I W A K I P H T D G 626

4090 4100 4110 4120 4130 4140  
CATTTTCACCCCTCTCCCCTCATGGGTGGATTTCGACTTAAACACCCCTCCTCCACAGATT  
H F H P S P L M G G F G L K H P P P Q I 646

4150 4160 4170 4180 4190 4200  
CTCATCAAGAACACCCCGGTACCTGCGAATCCTTCGACCACCTTCAGTGCGGCAAAGTTT  
L I K N T P V P A N P S T T F S A A K F 666

4210 4220 4230 4240 4250 4260  
GCTTCCTTCATCACACAGTACTCCACGGGACAGGTCAGCGTGGAGATCGAGTGGGAGCTG  
A S F I T Q Y S T G Q V S V E I E W E L 686

4270 4280 4290 4300 4310 4320  
CAGAAGGAAAACAGCAAACGCTGGAATCCCGAAATTTCAGTACACTTCCAACCTACAACAAG  
Q K E N S K R W N P E I Q Y T S N Y N K 706

4330 4340 4350 4360 4370 4380  
TCTGTTAATGTGGACTTTACTGTGGACACTAATGGCGTGTATTCAGAGCCTCGCCCCATT

S V N V D F T V D T N G V Y S E P R P I 726  
(SEQ ID NO: 9)

4390 4400 4410 4420 4430 4440  
GGCACCAGATACCTGACTCGTAATCTGTAATTGCTTGTTAATCAATAAACCGTTTAATTC  
G T R Y L T R N L STOP 735

4450 4460 4470 4480 4490 4500  
GTTTCAGTTGAACTTTGGTCTCTGCGTATTTCTTTCTTATCTAGTTTCCATGGCTACGTA

4510 4520 4530 4540 4550 4560  
GATAAGTAGCATGGCGGGTTAATCATTAATACTACAAGGAACCCCTAGTGATGGAGTTGGCC

4570 4580 4590 4600 4610 4620  
ACTCCCTCTCTGCGCGCTCGCTCGCTCACTGAGGCCGGGCGACCAAAGGTCGCCCCGACGC

4630 4640 4650 4660 4670 4680  
CCGGGCTTTGCCCCGGGCGGCCTCAGTGAGCGAGCGAGCGCGCAGAGAGGGAGTGGCCAA

# EXHIBIT II

Mamounas et al. concerning the D4 deletion which reads as follows:

The D<sub>4</sub> deletion is shown in bold underline text with flanking nucleic acids. The deletion corresponds to nucleic acids 2921-2935 as given in Srivastava, *et al.* (1983) *J. Virol.* 45: 555-564.

D4: cagagtcacaccaccagaccgaacctgggccc

ATC = I  
ACC = T  
ACC = T  
AGC = S  
ACC = T

	2890	2900	2910	2920	2930	2940
AATTGGCAT	<u>TGCGATTCCACATGGATGGGCGACAGAGTCATCACCACCAGCAGCGGAACC</u>					
N W H	C D S T H	M G D R V	<u>T T T S T</u>	R T	246	
	D3			D4		